

IN THE CLAIMS:

The following is a complete listing of the claims in this application, reflects all changes currently being made to the claims, and replaces all earlier versions and all earlier listings of the claims:

Claim 1. (Canceled)

Claim 2. (Currently Amended) An image pickup device according to claim [[1]]  
4, further comprising a transferring transistor for transferring the signal charges accumulated in  
said photoelectric conversion portion included in said pixel.

Claim 3. (Currently Amended) An image pickup device according to claim [[1]]  
4, wherein said first semiconductor region constitutes a part of said photoelectric conversion  
portion.

Claim 4. (Currently Amended) An image pickup device comprising an array of a  
plurality of pixels including photoelectric conversion portions for accumulating signal charges  
generated by photoelectric conversion and an amplifying transistor for amplifying the signal  
charges generated by said photoelectric conversion portion to output the amplified signal charges,  
according to claim 1 said device comprising:

a junction-type field effect transistor comprising a main electrode made of a  
first semiconductor region of a first conduction type connected to a control electrode region of

said amplifying transistor included in two pixels adjacent to each other, and a control electrode region made of a second semiconductor region of a second conduction type opposite to the first conductive type having the same electric potential as that of a semiconductor region of the second conduction type included in a semiconductor region forming said photoelectric conversion portions, said junction-type field effect transistors arranged in a same line connecting to each other in series;

an electric potential supplying circuit for supplying predetermined electric potential to the main electrode region of said junction-type field effect transistor; and  
a potential control circuit for controlling electric potential of said first semiconductor region by means of capacity coupling.

Claim 5. (Original) An image pickup device according to claim 4, wherein said potential control circuit is wiring connected to the main electrode region of said amplifying transistor.

Claim 6. (Original) An image pickup device according to claim 2, comprising a potential control circuit for controlling electric potential of said first semiconductor region by means of capacity coupling.

Claim 7. (Original) An image pickup device according to claim 6, wherein said potential control circuit is wiring connected to the gate electrode region of said transferring transistor.

Claim 8. (Currently Amended) An image pickup device according to claim [[1]]  
4, wherein said potential supplying circuit can selectively supply first electric potential and  
second electric potential different from the first electric potential, said image pickup device  
further comprising a first driving circuit for controlling said potential supplying circuit so as to  
supply the first electric potential to a plurality of the pixels from which signals are read, and to  
supply the second electric potential to a plurality of the pixels from which no signals are read.

Claim 9. (Currently Amended) An image pickup device according to claim [[1]]  
4, further comprising:

a second driving circuit having a first mode in which electric potential is  
applied to said main electrode of said [[a]] junction-type field effect transistor from said potential  
supplying circuit to connect in series said first semiconductor region included in each of the  
plurality of pixels and thereby reset said first semiconductor regions, and a signal obtained by the  
reset is output from said amplifying transistor, and a second mode for reading a signal  
corresponding to said signal charges obtained by said photoelectric conversion portion from said  
amplifying transistor; and

a differential circuit for processing a difference between the signal obtained in  
said first mode and the signal obtained in said second mode.

Claim 10. (Currently Amended) An image pickup device according to claim [[1]]  
4, wherein each of said plurality of pixels includes an amplifying transistor common to a plurality  
of photoelectric conversion portions and a transferring transistor for connecting the plurality of

photoelectric conversion portions to said common amplifying transistor.

Claim 11. (Canceled)

Claim 12. (Currently Amended) An image pickup device comprising an array of a plurality of pixels including photoelectric conversion portions for accumulating signal charges generated by photoelectric conversion, and an amplifying transistor for amplifying the signal changes generated by said photoelectric conversion portion to output the amplified signal charges according to claim 11, said device comprising:

a junction-type field effect transistor comprising;

a first main electrode made of a first semiconductor region of a first conduction type connected to a control electrode region of said amplifying transistor;

a control electrode region made of a second semiconductor region of a second conduction type opposite to the first conductive type having the same electric potential as that of a semiconductor region of the second conduction type included in a semiconductor region forming said photoelectric conversion portions;

a second main electrode made of a third semiconductor region of a first conduction type connected to a potential supply portion for supplying a predetermined electric potential; and

a potential control circuit for controlling electric potential of said first semiconductor region by means of capacity coupling.

Claim 13. (Currently Amended) An image pickup device according to claim 12, further comprising a transferring transistor for transferring the signal charges accumulated in said photoelectric conversion portion included in said pixel, wherein said potential control circuit is a line connected to the gate region of said transferring transistor both for controlling said transferring transistor and for controlling electric potential of said first semiconductor region by means of capacity coupling coupling.

Claim 14. (Currently Amended) An image pickup system comprising:  
an image pickup device defined in one of claims 1 and 13 claim 4;  
a lens for focusing light onto said plurality of pixels;  
an analog-to-digital conversion circuit for converting signals from said plurality of pixels to digital signals; and  
a signal processing circuit for processing signals from said analog-to-digital conversion circuit.

Claim 15. (New) An image pickup system comprising:  
an image pickup device defined in claim 12;  
a lens for focusing light onto said plurality of pixels;  
an analog-to-digital conversion circuit for converting signals from said plurality of pixels to digital signals; and  
a signal processing circuit for processing signals from said analog-to-digital conversion circuit.